

REMARKS

Claim 5 is pending in the present application. Claim 5 has been amended and claims 1-4 and 6-8 have been canceled without prejudice to or disclaimer of the subject matter contained therein. Claim 5 is independent. Reconsideration of this application, as amended, is respectfully requested.

Election/Restriction

Claims 1-4 stand withdrawn from further consideration as being directed to a non-elected invention. As the Examiner will note, claims 1-4 have been canceled. Applicant reserves the right to file a divisional application directed to these claims at a later date if it is so desired.

Rejections Under 35 U.S.C. §§ 102 and 103

Claims 5-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi, U.S. Patent No. 4, 754,969 in view of Naruo et al., U.S. Patent 6, 428,425. Claims 5-8 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Naruo et al. These rejections are respectfully traversed.

At the outset, it is respectfully pointed out that claims 7 and 8 have been canceled without prejudice to or disclaimer of the subject matter contained therein. Accordingly, the Examiner's rejections under 35 U.S.C. §§ 102 and 103 have been rendered moot.

With regard to independent claim 5, this claim has been amended to include the subject matter of dependent claim 6, which has been canceled. In view of this, independent claim 5 is directed to a golf club head having a ratio $T2/T1$ which is "not less than 1.9 nor more than 2.2."

In addition, independent claim 5 recites “wherein a metal plate to be disposed on a face of a wood golf club head has thickness of 1.5 to 2.7mm and a modulus of elasticity of 1000 to 21000 kgf/mm²; and a metal plate to be disposed on a face of an iron golf club head has a thickness of 1.5 to 2.5mm and a modulus of elasticity of 800 to 21000 kgf/mm².” Applicant respectfully submits that the references relied on by the Examiner fail to teach or suggest the present invention as recited in independent claim 5.

In the Examiner’s Office Action, the Examiner relies on the Kobayashi reference to disclose the use of a thin ball striking face in order to adjust the time that a golf club head comes into contact with a ball during impact. Specifically, Kobayashi discloses varying a thickness of the striking face of a golf club depending on the length of the golf club shaft. Referring to column 4, last paragraph, Kobayashi does in fact disclose a golf club face portion that has a thickness between 2 and 5mm. However as recognized by the Examiner, Kobayashi fails to disclose the specific modulus of elasticity (previously recited in claim 6) and the specific ratio T2/T1 as recited in independent claim 5 of the present invention. However, the Examiner relies on the Naruo et al. reference in order to modify Kobayashi to arrive at the presently claimed invention.

Referring to the Naruo et al. reference, this reference is directed to a metal golf club head which has a face member with a thickness between 0.7 and 2.7mm. However, the Naruo et al. reference is silent with regard to the modulus of elasticity as recited in independent claim 5 of the present invention. In addition, Naruo et al. is silent with regard to the ratio T2/T1 of 1.9 to 2.2 as recited in independent claim 5 of the present invention. In view of this, Applicant submits that Naruo et al. fails to make up for the deficiencies of Kobayashi.

In the Examiner's Office Action, the Examiner has taken the position that it would be obvious to make the face of Kobayashi of titanium or titanium alloy within the thickness range disclosed by Naruo et al. The Examiner then reasons that the ratio $T2/T1$ will ultimately depend on the material used for striking the face and the thickness of the striking face. It therefore appears that the Examiner has taken the position that the ratio $T2/T1$ recited in independent claim 5 of the present invention would be inherent in or obvious over the golf club head of Kobayashi as modified by Naruo et al. to be made of titanium and to have a thickness as disclosed by Naruo et al. Applicant respectfully traverses the Examiner's position. Neither of the Kobayashi and Naruo et al. references discuss the ratio $T2/T1$ as being of any advantage or benefit. In other words, these references do not recognize the ratio $T2/T1$ as a result effective variable. Therefore, it would not be an obvious modification of the combination of Kobayashi and Naruo et al.

In addition, Applicant submits that the ratio $T2/T1$ will depend on more factors than simply the material used for the striking face and the thickness of the striking face as asserted by the Examiner. Therefore, the ratio $T2/T1$ would not be inherent in the modified version of Kobayashi.

As can be understood from the Examples and the Comparison Examples of the present application, the specific modulus of elasticity is different even if the material (titanium) and face thickness (2.7mm) are the same (see Examples 2-4 and Comparison Examples 5 and 6). Also even though the material (titanium) and specific modulus of elasticity (11020 kgf/mm^2) are the same, each face thickness is different (see Example 1 and Comparison Examples 1-4). In other

words, the specific modulus of elasticity is not only defined by the material and the face thickness.

In view of the above, a face thickness and a specific modulus of elasticity are different conditions and the ratio $T2/T1$ may differ by changing various conditions including the material, the face thickness, the modulus of elasticity, the area of the face, etc. In view of this, merely making the Kobayashi golf club head out of titanium and having a thickness as disclosed by Naruo et al. would not result in a ratio $T2/T1$ as recited in independent claim 5 of the present invention unless the modulus of elasticity, the area of the golf club head, etc. are specifically selected in order to arrive at the presently claimed invention. In view of this, the Examiner's position of obviousness is improper and should be withdrawn.

Further to the above, referring specifically to Example 1 in the present specification on page 20, the thickness of the golf club head was set to 1.9mm and the modulus of elasticity was 11020 kgf/mm^2 . However, Comparison Examples 1-4 were the same as Example 1, except that the thicknesses of the particular golf club heads were varied. As can be understood from Table 1, at least the Comparative Examples 3 and 4 have a thickness and modulus of elasticity as recited in independent claim 5 of the present invention; however, the ratio $T2/T1$ is outside of the range of 1.9 to 2.2 recited in independent claim 5 of the present invention. In view of this, it becomes clear that merely modifying Kobayashi to be made of titanium of a particular thickness as disclosed by Naruo et al. would not arrive at the presently claimed invention. In view of this, the Examiner's rejection is improper and should be withdrawn.

The Examiner also relies on the Naruo et al. reference alone in order to anticipate or render obvious the presently claimed invention. However, the Naruo et al. reference fails to

disclose the modulus of elasticity and the ratio $T2/T1$ as recited in independent claim 5. In view of this, Naruo et al. fails to teach each and every element of independent claim 5 and therefore fails to anticipate independent claim 5 of the present invention. The Examiner's rejection under 35 U.S.C. § 102(b) is therefore improper and should be withdrawn.

With regard to the Examiner's position of obviousness, the Examiner has taken the same position taken above with regard to the combination of the Kobayashi and Naruo et al. references. Specifically, the Examiner has taken the position that the ratio $T2/T1$ would merely be an optimization of a known structure. However, as described, the Examples and Comparative Examples in the present specification contradict the Examiner's position that the ratio $T2/T1$ would ultimately depend on only the material and thickness of the striking face. Since Naruo et al. is silent with regard to the ratio $T2/T1$ as recited in independent claim 5 of the present invention, and the Examiner has not provided a reference to teach that such a parameter is known in the prior art, Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness and therefore the Examiner's rejection under 35 U.S.C. § 103 is also improper and should be withdrawn.

In view of the above amendments and remarks, Applicant respectfully submits that claim 5 clearly defines the present invention over the references relied on by the Examiner. Accordingly, reconsideration and withdrawal of the Examiner's rejections under 35 U.S.C. §§ 102 and 103 are respectfully requested.

CONCLUSION

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently pending rejections and that they be withdrawn.


It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Paul C. Lewis, Registration No. 43,368 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

Dated: October 16, 2006

Respectfully submitted,

By 

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